AGRICULTURAL DEPARTMENT.

J. P. STELLE, EDITOR.

[illegible] NOTICE—All communications intended for this department should be addressed to Prof. J. P. Stelle, Fort Worth, Tex.

AGRICULTURAL DEPRESSION.

There is no sense in denying the fact that there is in existence at this time a very serious depression among the farming masses as a whole. Persons may be found [illegible] that the depression is no worse [illegible] it has always always been, but [illegible] statements they would be entirely [illegible] the boundaries of truth. We well [illegible] it is common enough for farmers to [illegible] and that this has probably [illegible] prevailing way with them since [illegible] Adam. When the season turns [illegible] favorable one for crops they con[illegible] next door to starvation [illegible] engaged in their calling. [illegible] season is entirely all right [illegible] they complain of possible over-[illegible] resulting in low prices, and [illegible] almost to death over the [illegible] their barns are too small to accom[illegible] their crops; but it is not that kind of [illegible] had under consideration—it [illegible] entirely more serious. The [illegible] is real, with a fair promise, [illegible] come, of being here to [illegible].

[illegible] statements are worth nothing [illegible] causes for the depression can [illegible] pointed out. Once the cause is un[illegible] remedy may be intelligently ap[illegible]. The days of doc[illegible] diseases with calomel and then [illegible] to cure the work of the [illegible] passed. Men nowadays when [illegible] patient must first clearly un[illegible] the malady and then apply such [illegible] science has told them will di[illegible] the trouble.

[illegible] ruling it is our first duty to [illegible] the cause of this prevailing de[illegible] among farmers, a thing we shall [illegible] to do on very high authority.

[illegible] the leading Southern farmer [illegible] well know Mr. J. B. Hunni[illegible] reputation as one of the foremost [illegible] scientific agriculturists of our [illegible] day? In a recent paper to the [illegible] Cultivator of Atlanta, Ga., he ad[illegible] that farmers as a whole are grievously [illegible], and that while many causes may, [illegible] certain extent, conspire together to [illegible] this state of affairs there is one [illegible] cause. Remove this cause, he says, [illegible] all other minor causes would naturally [illegible] themselves. It is like a compli[illegible] case of sickness. Stamp out the chief [illegible] in the complication and the others [illegible] to little if anything afterwards.

[illegible] squarely down to work Mr. Hunnicutt says the chief cause of depression among Southern farmers may be traced [illegible] cotton production—not to that "[illegible] production" so much railed against by [illegible] writers of so-called agricultural lit[illegible] but to the fact that it is costing [illegible] planters entirely too much to [illegible] cotton. As they have been producing and handling cotton it has been costing [illegible] what they have realized for it [illegible] there has been no profit left. Of [illegible] it is utterly impossible to run a bus[illegible] depression without profits. [illegible] the lower grades have been sold [illegible] than cost of production, leaving the [illegible] without pay for his toil [illegible]. And right here comes into view [illegible] troubles. It lies in the "[illegible] grades" of the product. Don't every [illegible] cotton grower well know that it [illegible] as much to raise off grade as to [illegible] cotton? Why, then, raise off [illegible], and then go about the country [illegible] over the depression that has been [illegible] upon the individual from sheer [illegible] of personal duty?

According to Mr. Hunnicutt, there are a [illegible] number of cotton planters in Geor[illegible] other states who are making money [illegible], yet at the same time there are [illegible] goodlier number who are fail[illegible] even in every season when [illegible] price for cotton is below nine [illegible].

[illegible] and the lines need not be [illegible] to the lines of that state, [illegible] for the past ten years has [illegible] above one-third of a bale to [illegible], nor has the price averaged so [illegible] cents a pound for all grades. [illegible] the farmer who has not cut [illegible] of production, or who [illegible] averaging above the [illegible] average, has failed to make ends [illegible]. [illegible] has produced only one-third of [illegible] the acre, and has realized for his [illegible] less than nine cents per pound, he [illegible] all the year and paid for the [illegible] and found himself. If you think [illegible] too high, keep an accurate ac[illegible] every item a few years and see.

[illegible] course no people can afford to raise [illegible] cost and sell it to buy corn at a [illegible] to the corn grower without be[illegible]. To argue against this [illegible] extremely absurd. And thus [illegible] the prevailing agricultural de[illegible] in the South is clearly made out.

[illegible] we now have the cause of the [illegible], what is there to be done in the [illegible] averting it? To diagnose a disease [illegible] no remedy in view would be the [illegible] foolishness. The remedy exists [illegible] cheaper production. It is non[illegible] attempt to find a remedy for our [illegible] shortcomings in legislative enact[illegible] directed against other parties than [illegible]. A law compelling us to raise [illegible] at lower cost might do something [illegible] many of us, but oh, dear! what a hub[illegible] would kick up among us as "free [illegible] of the freest and best government [illegible] world ever saw!" A law compell[illegible] to pay more for our product than [illegible] fairly worth would sit about as bad on [illegible] of purchasers—we ought to [illegible] with good sense at both sides of the [illegible]. One law would be no more oppres[illegible] than the other.

But, says one, quit raising so much cotton and thus bring up the value. Folly! When [illegible] quit raising cotton to bring up the [illegible] somebody else will get at it, leaving [illegible] out in the cold and enabling the world [illegible] on all the same. The world takes American cotton for the reason that the world likes American cotton, but if American cotton should be held at figures en[illegible] above what it is worth the world would very speedily make arrangements to get along without it. The fact that a short crop sometimes brings up the price will never do to hang one's reliance upon. That short crop caught the world unprepared to obtain supplies from other quarters. Make it a regular thing and you'll soon see the cat jumping to a different kind of music. The United States largely supplies the world with cotton simply because she has got at it—throw somebody permanently in the way of that supply and it will not be long ere you have learned that the United States lacks a great deal of having cotton-production possibilities all to herself.

We'll never quit raising all the cotton we can possibly raise. The fledgeling who argues in favor of that kind of thing is simply offering a fool's argument. We cannot quit; we cannot even curtail. Nature, education, labor, all forbid it. The climate is suited to cotton culture. The soil is suited to it. We are raised to know how to raise cotton, and while we have the present labor to depend on we cannot afford to quit raising cotton. But can we raise it cheaper? Mr. Hunnicutt thinks we can, and that how to raise it cheaper now stands above all other questions before the Southern farmer.

How are we to reduce the cost of producing cotton? We can do it in divers ways, says Mr. Hunnicutt. We can reduce the cost of raising cotton by using more and better machinery. Machines do not eat or wear out clothing, nor cost anything when not used. All other occupations are utilizing machinery, and we cannot successfully compete with them with hand labor. Machine work is cheaper, and often better than hand work. Two-horse plows, subsoil plows, improved distributors and planters, and harrows and cultivators, —all do something to cheapen the cost of raising cotton. Again, machines necessitate removing rocks and stumps.

We can lessen the cost by working together to contract labor. Never employ a hand or rent a laborer a house until he brings a showing that he has settled satisfactorily with the man he left. This will place every laborer upon his character, and go a long ways toward settling all the labor troubles.

We can reduce the cost by reducing the acreage, and thus reduce the mule and hand bill. Then fertilize this reduced acreage more highly, and you "raise cotton cheaper, by raising more per acre." The cost remains much the same, as to production, if you get one bale to the acre as it would did you get but one-third of a bale to the acre.

The cost of raising one-third of a bale to the acre may be safely set at 9 cents a pound with no profits, of course, should cotton sell at 9 cents. If you do a little better and raise half a bale to the acre, selling at 9 cents, you get about $4.75 net on your acre's operations. If you do better than this, to the extent of a bale to the acre, you will find, on summing up all consequent outlays, that you have a net profit of $19.10 to the acre. Not a few planters manage to raise two bales to the acre, which, at 9 cents a pound, gives them a net profit of $18 on the two bales.

Mr. Hunnicutt has tables showing the outlays necessary to produce the different quantities of cotton to the acre, but lack of space has forced us to omit the tables and content ourself with the resultant figures as footed up.

We can produce cotton cheaper, continues Mr. Hunnicutt, by improving the land and by better methods of culture. And we can do a great deal in this direction by reducing the cost of living. Corn raised at home is cheaper than corn raised anywhere else. Oats is a cheaper and better feed for horses and mules than corn. Hay is cheaper than fodder. Grazing is cheaper than feeding.

Horses and mules are eating the life out of the cotton belt. It is cheaper to raise a mule than to buy him. We can live cheaper by keeping our money here. You had better pay your neighbor $100 for a mule raised here than a drover $90 for one raised in Kentucky or Tennessee.

We can produce cotton cheaper by studying the nature and habits of its germination, growth and maturity. How much the picking of cracked bolls annually costs the South will perhaps never be known. The lint is not grown until the boll has been open from three to five days.

If our people would unite in an investigation of this matter they would soon be able to inaugurate plans by which they could produce cotton on an average cost of 5 or 6 cents a pound. Some would produce it at even lower figures. Cheap production would not necessarily reduce the selling price, hence as a result of this cheap production millions of dollars not now coming to us would be spread among the people, knocking agricultural depression entirely off its legs and establishing comfort, prosperity, plenty and happiness over all the land and in every Southern home.

IRRIGATION COLONIES.

An Albuquerque correspondent of the Florida Farmer and Fruit Grower tells something about the irrigation colonies, or communities, as now operating in New Mexico. He says irrigation is, at present, attracting much attention, even in the so-called humid sections of our common country. He has tried farming in Ohio, Iowa and Kansas, and is now engaged in the same kind of business in one of the colonies near Albuquerque, and is doing better by far than ever before. Any man who irrigates can do better than the man who does not, he says, even though the latter is operating in a region of heavy rainfall. It will never do to depend upon the clouds for moisture if one expects his crops to do the best that crops could do. If the clouds happen to not give a full supply of rain at all times exactly when needed, the crop cannot be otherwise than short, its extent of shortness depending upon the deficiency in water supply. On this account the crop, even in humid regions, is very often a partial failure, and occasionally it is a total failure, or next door to it. Statistics show that in all rainy countries—that is, where the farmers depend upon the rains to make their crops—the seasons of too much drouth may be safely counted upon as coming three seasons out of every five, thus giving the farmer three short crops to every two that could be reckoned as entirely good.

Then in those humid regions there is another danger not to be expected in regions west of the 97th meridian—the eastern line of the United States irrigation inquiry. That danger lies in seasons of too much rain, which come about as often as do seasons of drouth, and are about equally as injurious to crops. Both of these unfavorable conditions are apt to come in the same year, giving a period of too much rain to be followed by a period of damaging drouth, or vice-versa.

In our great Southwest, where drouth is the only stumbling block to be encountered by the agriculturist, irrigation makes the crop an entirely sure thing, and for every year alike. Under proper arrangement the water supply never runs out and the crop gets exactly the moisture it needs at the very nick of time when needed. With our good soil and plenty of sunshine there is nothing required but proper cultivation and a well regulated water supply to insure a good crop every year. The good soil and the sunshine this country (all the Southwest) possess in a very unusual degree; we have the "early and the later rains," that is in the early spring and the latter part of summer, but in the time between these periods there is a chance that our rain supply may fall short of the crops' needs, so we make ready for this possibility by arranging an irrigation system. With this properly arranged drouth is a matter of little consequence to us—our crops go right on growing the same as if the clouds were giving them their required inch of rainfall on one certain day in every week.

When an irrigation colony arranges to establish itself in the Southwest, says this correspondent, the first thing looked after is a water supply sufficient to irrigate the land it is proposed to occupy. Having settled on the water supply a ditch is cut from it leading to the grounds to be cultivated. It may be a ditch cut from some running stream, or it may lead from some reservoir supplied in part by rains in their season and in part by artesian wells. This ditch is made by the people of the colony in common, each individual having his sub-ditch leading from it to his grounds, and his time for using the water. The main ditch is under the charge of one of the persons interested, who is chosen every year for this purpose; his duty is to see that the main line is kept in order, and for that purpose he may call out at any time all those who use the water, for the purpose of repairing or cleaning out the ditch. This requires on an average about three days' work for each person each year, and that represents the entire cost of the water supply. The hours at which different individuals may use the water are so arranged as not to allow anybody to be "shut off" for more than two or three days at a time.

The field to be irrigated is cut up into long narrow beds, with little ditches running between them. The water is let into these little ditches at the head of the beds and allowed to flow along them across the field to be absorbed at the sides and taken under to the roots of the plants. Responding to this treatment everything grows with a luxuriance that would astonish a farmer from the "rain belt." Two crops are raised from the same land nearly every year. Oats may be put in during the latter part of February and cut in May; corn is then put on the same land and has plenty of time to mature before frost.

These irrigation colonies are made up of small farmers. While the writer has referred to oats and corn as crops, to make it plain to all as to what can be done, other crops, as fruits, truck, etc., are most generally grown, being most profitable in small farming, and best capable of giving several crops on the same land in the same season. It is not probable that any 10,000 acre farms will ever be worked on this plan, and there is no need that those should be, for experience has fully established the fact the "little farm well tilled" is better for the individual as well as for the community.

While the positions taken by this correspondent were intended to refer mainly to New Mexico, it is entirely safe to state that so far as they relate to the advantages secured by irrigation colonies of small farmers, and to the gains derivable from an artificial water-supply to crops, they apply equally as well to all Western Texas, and particularly to the grand prairie reigon described in our "Popular Science" column of last week. A very large proportion of the best lands of the grand prairie region could be irrigated by artesian wells, or through other means, and once under irrigation no lands could excel them in point of productiveness. The region is everything that could be desired as to soil, climate and healthfulness, and as to a most desirable country to live in.

It seems to us that our people should unite in an effort to start this irrigation colony business on the grand prairie of Texas. A little effort on the part of our adopted citizens from regions where there are people desirous of bettering their condition in life by getting into a better country would set the ball rolling, no doubt. When one colony of this character had been located, say a colony of Illinoisans, or a colony of Indianians, or a colony of Ohioans, or a colony of Missourians, as the case might be, the heaviest part of the work would have been accomplished, for other similar colonies would soon come of themselves. The first successful colony would be a standing advertisement worth more than all the advertising of other character that could be resorted to.

It is but natural that people going to a strange country should like to have their friends around them, and a community composed of their own kind of people, in every respect. It is this disposition that makes colonies popular—the new citizens feel that they are not casting their lots among strangers. It is like moving a little section of the native state along with them, and therefore goes largely towards dispelling doubts and fears, so to speak. Of course there is nothing to doubt or fear in the case, but human nature is human nature the world over.

It must be admitted that there might not be a great deal for local land speculators in this colony arrangement, but there would certainly be much in it for the region of country colonized, and eventually much for Texas at large.

We would not like to have it understood as our idea that this grand prairie region is well adapted to no other colonization save irrigation colonies. It is a magnificent agricultural region without irrigation, and therefore well adapted to colonization on the old plan. Irrigation would place it far ahead of any non-irrigating region in the world, and we specially favor irrigation colonists on the New Mexican plan for the reason that it would give the colonists fully three acres in one so far as related to annual yields, thus enabling them to live close together and form more compact communities.

BILL ARP ON FARMING.

The versatile Bill Arp, who cultivates a small piney-woods farm in Georgia, and dabbles somewhat in a little of everything, has lately been turning loose upon the public an essay on agriculture. In his effort he leads off by declaring that "variety is the spice of life," according to the old maxim, and that, if the said old maxim be true, the farmer has enough of life's spices to get along with first-rate—more of them, perhaps, than are enjoyed by anybody else. His life may be hard and his labor rough, as writers usually tell us is the case, but it is well seasoned and made palatable and pleasant by its ever-changing duties. Most people who are not farmers have but three ideas about the business, and these are the plow and the hoe and the hot, burning sun coming down. Some, who are better acquainted, give us credit for reaping the grain, and gathering the corn, and picking the cotton, and rejoicing over abundant crops; but they mix all that with toil and sweat and cockle-burrs and Spanish needles and pack-saddles and heavy dews, and all that sort of thing to endless extent.

Bill says he was ruminating over the farmer's daily life—not the laborer's, who is hired to work on the farm, but the farmer who is either a working landlord or a working tenant, who is well-to-do and lives upon the same farm from year to year. He was thinking about himself and his tenants, if he had any. Not rich enough to be independent nor poor enough to suffer, he moves along happily from day to day and year to year. In the course of this thinking he jumped to the conclusion that farmers are the producers, the jurors, the road workers, the breeders of a hardy, healthy, industrious stock. It is their sweat and toil that support the rich and sustain the schools and churches of the country. They visit the sick and help the needy, and dig graves and bury the dead. They have their pleasures and their pastimes; they tell their latest stories and crack their jokes, and laugh without a strain. Their children are as happy when riding a stick or a cornstalk, as a rich boy when mounted on a Shetland pony. The little, poor girl, who has to nurse the baby, is as happy as the rich one who spends the evening in visiting with fan and parasol and high-heel slippers. Work, useful work, that helps maintain the family and lightens the burdens of others, is the panacea for all diseases of the mind, as well as the body. It is not the laboring men who fill the asylums or the jails.

There is something peculiar in the effect that manual labor or bodily exercise has upon the mental health of man, continues Bill Arp. It seems to balance him and compose him. A man con sit around, or stand around and do nothing but work his mind until his body becomes disordered, deranged, demoralized. He has long since realized that he can think better after he has been at work, and he certainly enjoys his rest better. Furthermore, he is sure that workingmen are never cranky. These city folks who work nothing but their brain and their chin, are the fellows apt to go off on sensations. They are apt to be either too high or too low. One generation may stand it pretty well, but the next will be puny. Good stock is not raised in a city, but goes there from the country. All the best looking men in the cities were raised in the country. The variety of life upon a farm contributes to health. It brings every muscle into play, and every lobe of the brain. They tell us that a horse will last longer on a hilly road than a level one, and just so with a man with a fence or water gap to fix, or a shed to build, or an axe to grind, or a wagon to repair, or a single-tree or a plow stock, or an axe-handle to make, or who has to go to mill, or have a mule shod, or haul some lumber, or hew out some timber, or split some boards, or work on the roads, or go seining, or squirrel hunting, or do a hundred other things too tedious to mention. The work of most every day is a change of schedule.

The humble farmer, as you may consider him, the man who really feels an interest in farming as such, and has no axe to grind away from home, is the most independent man in the world. He belongs to nobody. His time is his own. He can stop and talk to a neighbor if he wants to, and it is nobody's business. There is nobody watching him. When the time comes he will go to town and vote and then go back to work again and let the political machine run itself until it runs down. On the whole, it is hard to tell who has the best time in the world, the subject or the king. But for himself Bill Arp can say truly, and with deliberation, that a good farmer has a better chance for happiness than anybody else that he knows of.

TWO KINDS OF FARMING.

A correspondent of the Country Gentleman, after attending a meeting of the Otsego (N. Y.) dairymen's association, says of the farmers seen there that they told of successes achieved in the past year and their brains were active for the future, and next winter, when they meet again, accounts of still better results will undoubtedly be heard of. The lawyer and the doctor dropped in on the meeting occasionally and took part in the discussions, but when it came to arguments, they usually got the worst of it. These farmers did not complain of hard times, or say farming was a failure. They were looking ahead and planning, hopefully, for next season, and they declared that well directed labor on the farm did pay, and it does. There were no moon men there, and men who put off till to-morrow what should be done now.

But, he adds, there is another and large class of farmers in the country who contend that farming don't now and never can be made to pay. You ask one of them how his crops were last year, and he will tell you that he was away, and the boys planted the "taters" when the moon was wrong, and they failed. When you question him about his methods of fertilizing and tilling, you soon find out where the trouble was. He will tell you that he was converted when the moon was wrong and he backslid; that he reformed again when the moon was right, and he has stuck fast ever since. The last statement is just as reasonable as the first. This man is contented with his lot, and he never will be any different. He does not try to advance; clinging to old notions and whims that have been handed down to him for a generation; "farming don't pay" with him, but he doesn't care—he gets a living, simply exists, and is satisfied.

HOW IS THIS?

The editor of the Farmers' Home Journal says the best thing a farmer can have is contentment. Not the don't-care kind, but that in opposition to giving up entirely and spending the time in grumbling. There is a great cry that farming does not pay, while at the same time there are a great many thrifty men who started with nothing and worked along steadily, not inquiring whether there is money in farming, and have paid for their land, improved it and stocked it and are out of debt.

OUR CORRESPONDENTS.

This department is devoted to answering such questions as may be asked by our subscribers, which may be of general information. Inquiries of personal character that require answer by mail should always have stamp inclosed. Please give full name and postoffice address in addition to any such signature as "Subscriber," or "A. G. D," not for publication, if against the will of the writer, but to admit of direct communication should such a thing be deemed necessary. Address as directed at head of this page.

TWO LITTLE GEOLOGISTS.

We send you some rocks which our party gathered in a canyon about sixteen miles northwest of Fort Worth. They were taken from the bed of the stream fully fifty feet below the common level of the surrounding country. What are they? What do they indicate? We are two little girls, aged eight and ten years respectively, and we would much like for you to answer us through THE GAZETTE.

LOVE MORELAND,
Azle, Tex. GUSSIE REYNOLDS.

P. S.—We also send a rock out of our yard—the one with a hole in it. There are many like it to be found hereabouts.

L. M.
G. R.

Had it occurred to our young friends to place numbers on the specimens sent, keeping a copy and description for their own reference, we might have been the better enabled to make them understand us clearly, but we think we can get at it pretty well anyway. There are ten specimens in all; and they are very interesting. We were extremely glad to get them—such favors from the young folks always please us, showing, as they do, that the people to take charge of the world after us elders have retired will be a people interesting themselves in science, the noblest Roman among all others so far as relates to human progress.

The large specimen not in the box, and looking like a great, rough, whitish-colored beet, is a stalactite. To pronounce the word correctly the accent must be placed on the second syllable—get the old folks to fix that for you. In the box are two additional stalactites, one looking like an ordinary long blood beet of the garden (small size), save that like the large specimen its color is dirty white, and the other near same length but more irregular in form, being somewhat branched and jumbled about in its structure. Do you know what the Germans call "noodles?" They are made by rolling wheat dough out between the hands in small rolls to be employed in thickening soup. Well, this last named stalactite looks like it might have been made by taking up a handful of "noodles" and squeezing them together, criss-cross and every way, in a mass some six inches in length and an inch and a half through at the thickest point.

A stalactite is usually formed in a cavern under ground, and it is more than merely probable that your stalactites were so formed. The canyon visited by you is just on the edge of what geologists call the coal measures, a formation in which caves are more or less common. Long, long ago, there was a cave where the canyon now is, most likely, but the waters wearing out the deep canyon finally cut into and destroyed the cave, leaving the stalactites that once hung from the roof lying scattered about where you found them. A stalactite is simply a rock icicle, so to speak. You know how an icicle forms on the eves of the house. Water runs down slowly, and thin layers of ice freeze, one atop of the other, until we have an icicle. That's how the stalactite is formed, only no freezing figures in the case. A little stream of water heavily charged with lime trickles down from the roof of the cave. It is what we call "hard water." A little of the lime settles on the rock where the tiny stream comes out, then a little more atop of that, and so on until a stalactite is made. It takes a very long time to form a stalactite. The largest specimen sent (some ten inches in length and six inches through) was probably hundreds of years in forming.

Where the water dripping down from the top of the cave strikes the rock floor beneath a formation similar to the stalactite is sometimes built up in the form of a cone. This formation, while identical in character, is distinguished from the other by being called a stalagmite—accent on the second sylable, the same as in the first instance.

There are in the box two specimens which have the appearance of wood (you can see the grain), and two which have the appearance of bark. People sometimes call the likes of this petrified wood or petrified bark, and not a few think that wood or bark placed in certain streams or ponds will become so petrified in a short time. This last is all a mistake. The specimens under consideration are what we style lignitized wood, or lignitized bark—accent on the first syllable. They sure enough represent what was once wood or bark, but not that of any species of tree now growing in any part of the world. It was a growth of the "coal age," so-called, and the lapse of time necessary to get it into the condition as characterizing it when found by you was so long that we shall not attempt to give you any figures on it.

One of the wood specimens has scattered over it numerous small glittering crystals that may have made you think of diamonds. They are not diamonds, however, but crystals of gypsum formed by a combination of lime and sulphur.

The three very pretty specimens in the box weighing about two ounces each, being irregular in shape, though inclined to roundish, and having a rich golden appearance when broken are iron pyrites—accented on the second syllable for correct pronunciation. The mineral is one attracting a great deal of attention on account of its bright metallic lustre, not a few finders supposing it to be gold. On this last account it is often called "fools' gold." It is rather a common substance and one of no particular value.

The brownish, cup-like rock from the yard is a low grade iron ore, common in most sandy regions. One occasionally finds it as hollow tubes, a foot or two in length. Its composition is sand, cemented together by iron brought as a solution in water. The beautiful cactus growing in the hollow of the specimen which you seem to have pressed into service as a flower pot, is the Cereus giganteus of botanists, a species which grows up to the height of quite a tree out on the Staked plains.

Your rocks indicate nothing beyond what we have mentioned.

RIBBON CANE, SYRUP AND SUGAR.

The ribbon sugar cane matures well in this section of Texas, and would be more extensively cultivated if we could make syrup from it that would not ferment or granulate, and could learn the process of converting it into sugar. The sugar from the syrup product is more of a rock candy than a sugar. Please give the process of converting it into sugar, also into syrup that will not ferment. Why is it that cane fertilized with scrapings from the stable or cowlot is salty in character? What will prevent its becoming so where these fertilizers are used? G. M. BOYNTON, M. D.
Swift, Tex.

It is a difficult matter to make good syrup from ribbon cane that will not granulate more or less. Even the best sugar-house molasses made at the large factories will do it. In days when sugar-house molasses was sugar-house molasses sure enough, we very often bought the barrels, after the molasses had been drawn off, expressly for the sugar that would be found at the bottom. Sometimes we would get twenty or thirty pounds of wet sugar which could be re-boiled and turned into molasses. It answered well for use in preserving fruits. But now-a-days one seldom finds much sugar at the bottom of a molasses barrel, owing to the fact that a large per cent of the contents of the barrel had been glucose, a substance that will not granulate, as you well know. The finest "New Orleans sugar house molasses" is now very apt to be largely made up of glucose. So extensively has such adulteration been carried on that the general taste has been educated to expect it. Most persons would now object to pure sugar-house molasses on the plea that it did not taste exactly right some way, and therefore must have something wrong about it. If pure sugar-house molasses is now on the market in any way save under seal in tin cans, we don't know it.

We have made a great deal of molasses, or syrup, from ribbon cane on the small-plantation plan without any trouble whatever so far as related to fermentation, and following is our process:

Have large kettles set in a furnace convenient to your evaporator, and run your juice into them directly from the mill. To each gallon of fresh juice add about one-third of an ounce of good unslacked lime. Boil and skim off the matter that rises to the surface so long as any rises, after which move your juice to the evaporator and reduce it to the thickness desired. Don't be afraid of getting it too thick. A great trouble with many syrup makers lies in the fact that they do not cook down thick enough.

The liming, boiling and skimming is important, as lime neutralizes the natural acid in the juice and skimming removes impurities.

We have kept syrup made on this plan for years without having it show any disposition whatever to ferment. But there was always some settling of sugar at the bottom of the barrel, and we know of no way to prevent that.

Sugar may be made on a small scale, but considering the selling price of sugar it would scarcely pay. It would be an inferior raw sugar and would have to go away to a refinery before you would be willing to use it. Your better plan, did your people decide to go well into sugar cane culture, would be to get a small central sugar mill to work up all the product of the region. Such mills are now doing a good business in many localities.

What you say with reference to a salty character being imparted to the cane through an employment of stable or lot manure as a fertilizer, is something entirely new to us. Never heard of anything like it before, though in our cane operations we have always made a liberal use of stable and lot manures. Salt (chloride of sodium) is an element seldom found to any great extent in plants, therefore the phenomenon you mention must be one entirely worthy of careful scientific study.

THE LANTANA AS A PEST.

In Sunday's GAZETTE you have an article on the lantana in Texas. It may interest your readers to learn that in the island of Ceylon, which I visited last winter, the lantana, like the sweet brier of Tasmania, has become a pest, growing and spreading with great rapidity, and crowding out other and more useful vegetation. I don't know that the climatic and other conditions are favorable to the spread of this plant in Texas, but too much care cannot be taken in the introduction of the flora and fauna of other lands, of which little or nothing may be known.

The rabbits which are such a scourage in Australia and New Zealand, breeding in immense numbers and consuming the grass to its very roots, over vast areas of pasturage, were introduced many years ago from the warrens of England. Now large sums are offered by the colonies for an effectual means for their extermination. So in the island of Tasmania, the sweetbrier was introduced many years ago, as a pleasant reminder of home. Now it covers the fields and pastures, spreading with the greatest rapidity; and it is always impossible to eradicate it.

In the same manner, in our own and other countries, chiefly through ignorance, similar errors have been made to be repented of at leisure. G. A. GOODALE,
Captain United States Army.
Fort Worth, Tex.

Capt. Goodale is correct in what he says with reference to the unfortunate work sometimes wrought through ignorance, but we cannot think that we have been running any risk of doing anything bad that way in our recommendation of the lantana (Lantana camara) for flower garden culture in Texas. No less authority than Peter Henderson says in his handbook of plants, page 115, as we stated in the article referred to, that the lantana was first introduced into this country from the West Indies in 1692. This, up to the present time, has given it just 200 years in which to make itself known here as a pest, and since it has not yet hung out its shingle as anything of that sort, we take it for granted that there cannot still exist any very great amount of danger. Besides, we were referring specially to Lantana camara, an American species, and since there are several hundred species of lantana, and the captain does not give us the botanical name of the pestiferous species he saw in Ceylon, we think it highly probable that each of us has had in mind an entirely different plant.

OUR WILDFLOWER SEEDS, ETC.

I like your general information department of THE GAZETTE better and better every week. It is certainly worth a great deal to Texas, as there is nothing else like it in the state, and never has been. Those askers after information must put a great deal of labor on your hands in the way of hunting up what they want, for it is not to be presumed that any one man could have it all in his own head, and ever ready for dealing out to order. I see that you are grumbling at the folks for not giving you their real names. You say they should not be ashamed of Texas. Well, I suppose they are not, any of them, but there is something about many people which makes them shrink from the thought of seeing their names in a newspaper. I am myself one of that kind, and yet I cannot tell why. But since you express a willingness to print letters for persons without printing their real names, provided they give you their real names in a private note for your own reference, I have concluded to ask you a question or two.

You have been saying a great deal about the beautiful wildflowers of our Texas prairies, and my own observations convince me that you have not said one word too much. I am originally from another state, and have visited many states, but in no other state have I seen such magnificent wildflowers as in Texas; indeed, taking them as a whole, I have seen no tame flowers that could favorably compare with them. Now, do you not think it would pay some Texan to collect seeds of these beautiful wildflowers and put them for sale on the general market? The plants might not all do for out-of-door culture at the extreme North but no doubt they would be entirely at home in all the lower Southern states, and the people of those states are a flower-loving people. Please let me hear from you through THE GAZETTE. You will find my real name and address on the back of this sheet, but don't print it. A LADY.
Fort Worth, Texas.

We think it highly probable that a considerable business might be worked up in the direction suggested by you, for seeds of our flowering plants are abundant and easily collected, but it would cost a good deal to work the thing up. A fine catalogue would have to be put out at considerable expense, giving nice illustrations of some of the most prominent species. It would furthermore be necessary to have the scientific name of each species correctly given. And in addition to this it would be necessary to do a good deal of newspaper advertising. Going into the work on any other plan would scarcely bring in a paying return. If we were going into such a work we'd make fine Texas pecans for planting a prominent feature in our operations. The pecans, neatly illustrated, would help towards drawing attention to the other seeds.

The first part of your letter mentions things in which we, ourself, stand personally interested. Thanks for what you so kindly say with reference to our "general information department." Of course it involves much research and labor, but this is what THE GAZETTE is paying us to perform. But we must say that it is passing strange that so many people will write us in violation of our rules so far as relates to the oft-repeated fact that we must know who our correspondents are. And the letters of this character they still come pouring in—many of them on subjects of decided general interest. We attend to every letter sent us, provided we are informed as to who the sender is, hence when persons find their favors neglected it would be well for them to think over whether or not they gave us their real name and address. A very large per cent of the letters received are answered directly through the mails—how could we reply to a letter to be so answered unless we knew who the correspondent was? In printing letters we'd always much prefer giving the real names, still, we'll print with this favor denied us, provided we know who the writer is. Some of our correspondents have hit upon a new dodge, which is no kind of improvement on the old plan. They sign a nom de plume and then cut off the corner of the sheet; they give mere initials for our reference. What are those initials worth to us? One of the best letters received by us this week was from a lady, and put up on this plan. If she reads this she will understand why her letter has been laid over, with many regrets.

A FLY FOR NAME.

I send you for identification a huge bug, or fly, or whatever you may be pleased to call it. Captured it at the Rosedale pavilion, whither it was attracted by the lamplight. Please look it over and let me know through THE GAZETTE what manner of creature it is. R. C. HOPE.
Fort Worth, Tex.

A large, brownish water-fly, measuring some three inches in length and one inch across the wings. Has a pair of horns on its head like unto those of an old-fashioned Texas steer, though unlike the horns of the Texas steer, which stand out right and left, the horns of the fly range forward and come together at the points. Its common name is "hellgramite"—scientific name, Corydalis cornutus. Breeds in water, where its large spiny larva—as large and long as a man's little finger—is sometimes captured by the boys to be used as fish-bait. A full description of the insect was published in these columns some weeks ago, in reply to a note, with specimen, sent us by Mr. McAdams of Fort Worth.

TO KILL RED ANTS.

I have a cheap and efficient insecticide for ants, and it will effectually eradicate the large red ants that have heretofore been so hard to get rid of. Pour from one-half to one ounce of bisulphide of carbon into the mouth of the bed and touch a lighted match to it. If a large bed repeat in three days. Can get get it at any drug store—price 35 cents a pint. H. S. MORAN.
Weatherford, Tex.

Some months ago we recommended through these columns what we suppose to be the same agent for destroying the large red or agricultural ant, as it is often called, though our manner of treatment differed somewhat from that proposed by Esquire Moran. We pour bisulphuret of carbon into the mouth of the formicary, and after it has passed down we close the opening securely with clay mixed into a stiff mud, to prevent the escape of the highly volatile liquid through the air as a gas, a thing it would otherwise soon do. So confined, its fumes pass into every avenue of the formicary and promptly destroy all the ants. This method is much better than to fire the sulphuret—a single application of an ounce, or even less, will seldom fail to complete the work of destruction for a large hill of ants. The same agent is often employed in the same way, and with good effect, for destroying prairie dogs.

Bisulphuret or carbon is a gaseous liquid made by passing the vapor of sulphur over burning charcoal in a porcelain tube. It is a poison, of course, and has a very fetid smell, but there is no danger attending the handling of it if one keeps fire away. But one must be careful of fire, as it is highly explosive.

COLORADO GRASS SEED.

I am a patron of THE GAZETTE, therefore I would like to ask you where I might obtain so much as one peck of Colorado grass seed. I would furthermore like to have instructions as to the best time for sowing Colorado grass. M. A.
Box A, Sand Rock, Foard county, Tex.

We do not know who has the seed for sale, neither are we well informed relative to the culture of the grass. Will some reader kindly give our correspondent the information desired, addressing as above?

ONE OF THE BIG BUGS.

I have heard of "big bugs" through all my born days, but was never entirely certain that I had seen one until last night. It flew against an arc light on the public square and fell to the ground, where I captured it—you will find it all safe in the accompanying box. What is it, any way?
Fort Worth, Tex. NIGHT WALKER.

It is a "big bug"—your head is entirely level in one particular as to what it is. Of course we sometimes speak of "big bugs" that are really not bugs at all, but this is a